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ON THE STRATIFICATION OF LANGUAGE

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SIR ROBERT REDE'S LECTURE,

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BY

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LECTURE

ON THE

STRATIFICATION OF LANGUAGE.

THERE are few sensations more pleasant than that of wondering. We have all experienced it in childhood, in youth, and in our manhood, and we may hope that even in our old age this affection of the mind will not entirely pass away. If we analyse this feeling of wonder carefully, we shall find that it consists of two elements. What we mean by wondering is not only that we are startled or stunned:—that I should call the merely passive element of wonder. When we say "I wonder," we confess that we are taken aback, but there is a secret satisfaction mixed up with our feeling of surprise, a kind of hope, nay, almost certainty that sooner or later the wonder will cease, that our senses or our mind will recover, will grapple with these novel impressions or experiences, grasp them, it may be, throw them, and finally triumph over them. In fact we wonder at the riddles of nature, whether animate or inanimate, with a firm conviction that there is a solution to them all, even though we ourselves may not be able to find it.

Wonder, no doubt, arises from ignorance, but from a peculiar kind of ignorance; from what might be called a conscious ignorance; an ignorance which, if we look back at the history of most of our sciences, will be found to have been the mother of all human knowledge. For thousands of years men have looked at the earth with its stratifications, in some places so clearly mapped out; for thousands of years they must have seen in their quarries and mines, as well as we ourselves, the imbedded petrifications of organic creatures: yet they looked and passed on without thinking more about it—they did not wonder. Not even an Aristotle had eyes to see; and the conception of a science of the earth, of Geology, was reserved for the eighteenth century.

Still more extraordinary is the listlessness with which during all the centuries that have elapsed since the first names were given to all cattle, and to the fowl of the air, and to every beast of the field, men have passed by what was much nearer to them than even the gravel on which they trod, namely the words of their own language. Here, too, the clearly marked lines of different strata seemed almost to challenge attention, and the pulses of former life were still throbbing in the petrified forms imbedded in grammars and dictionaries. Yet not even a Plato had eyes to see, or ears to hear, and the conception of a science of language, of Glottology, was reserved for the nineteenth century.

I am far from saying that Plato and Aristotle knew nothing of the nature, the origin, and the purpose of language, or that we have nothing to learn from their works. They, and their successors, and their predecessors too, beginning with Herakleitos and Demokritos, were startled and almost fascinated by the

mysteries of human speech as much as by the mysteries of human thought; and what we call grammar and the laws of language, nay, all the technical terms which are still current in our schools, such as noun and verb, case and number, infinitive and participle, all this was first discovered and named by the philosophers and grammarians of Greece, to whom, in spite of all our new discoveries, I believe we are still beholden, whether consciously or unconsciously, for more than half of our intellectual life. But the interest which those ancient Greek philosophers took in language was purely philosophical. It was the form, far more than the matter of speech which seemed to them a subject worthy of philosophical speculation. The idea that there was, even in their days, an immense mass of accumulated speech to be sifted, to be analysed, and to be accounted for somehow, before any theories on the nature of language could be safely started, hardly ever entered their minds, or, when it did, as we see here and there in Plato's Kratylos, it soon vanished, without leaving any permanent impression. Every people and every generation have their own problems to solve. The problem that occupied Plato in his Kratylos was, if I understand him rightly, the possibility of a perfect language, a correct, true, or ideal language, a language founded on his own philosophy, his own system of types or ideas. He was too wise a man to attempt, like Bishop Wilkins, the actual construction of a philosophical language. But, like Leibniz, he just lets us see that a perfect language is conceivable, and that the chief reason of the imperfections of real language must be found in the fact that its original framers were ignorant of the true nature of things, ignorant of dialectic philosophy, and therefore incapable of naming

rightly what they had failed to apprehend correctly. Plato's view of actual language, as far as it can be made out from the critical and negative rather than didactic and positive dialogue of Kratylos, seems to have been very much the same as his view of actual government. Both fall short of the ideal, and both are to be tolerated only in so far as they participate in the perfections of his ideal state and his ideal language.* Plato's Kratylos is full of suggestive wisdom. It is one of those books which, as we read them again from time to time, seem every time like new books: so little do we perceive at first all that is pre-supposed in them :— the accumulated mould of thought, if I may say so, in which alone a philosophy like that of Plato could strike its roots and draw its support.

But while Plato shows a deeper insight into the mysteries of language than almost any philosopher that has come after him, he has no eyes for that marvellous harvest of words garnered up in our dictionaries, and in the dictionaries of all the races of the earth. With him language is almost synonymous with Greek, and though in one passage of the Kratylos he suggests that certain Greek words might have been borrowed from the Barbarians, and, more particularly, from the Phrygians, yet that remark, as coming from Plato, seems to be purely ironical, and though it contains, as we know, a germ of truth that has proved most fruitful in our modern science of language, it struck no root in the minds of Greek philosophers. How much our new science of language differs from the linguistic studies of the Greeks; how entirely the interest which Plato took in language is now supplanted by new interests,

* See Benfey, Ueber die Aufgabe des Kratylos. Göttingen, 1868.

is brought home to us when we see how the *Société de Linguistique* lately founded at Paris, and including the names of the most distinguished scholars of France, declares in one of the first paragraphs of its statutes that "it will receive no communication concerning the origin of language or the formation of a universal language," the very subjects which, in the time of Herakleitos and Plato rendered linguistic studies worthy of the consideration of a philosopher.

It may be that the world was too young in the days of Plato, and that the means of communication were wanting to enable the ancient philosopher to see very far beyond the narrow horizon of Greece. With us it is different. The world has grown older, and has left to us in the annals of its various literatures the monuments of growing and decaying speech. The world has grown larger, and we have before us, not only the relics of ancient civilisation in Asia, Africa, and America, but living languages in such number and variety that we draw back almost aghast at the mere list of their names. The world has grown wiser too, and where Plato could only see imperfections, the failures of the founders of human speech, we see, as everywhere else in human life, a natural progress from the imperfect towards the perfect, unceasing attempts at realising the ideal, and the frequent triumphs of the human mind over the inevitable difficulties of this earthly condition,—difficulties, not of his own making, but prepared for him, and not without a purpose, as toils and tasks, by a higher Power and by the highest Wisdom.

Let us look then abroad and behold the materials which the student of language has now to face. Beginning with the language of these Western Isles,

we have, at the present day, at least 100,000 words, arranged as on the shelves of a Museum, in the pages of Johnson and Webster. But these 100,000 words represent only the best grains that have remained in the sieve, while clouds of chaff have been winnowed off, and while many a valuable grain too has been lost by mere carelessness. If we counted the wealth of English dialects, and if we added the treasures of the ancient language from Alfred to Wycliffe, we should easily double the herbarium of the linguistic flora of England. And what are these Western Isles as compared to Europe; and what is Europe, a mere promontory, as compared to the vast continent of Asia; and what again is Asia, as compared to the whole inhabitable world? But there is no corner of that world that is not full of language: the very desert and the isles of the sea teem with dialects, and the more we recede from the centres of civilisation, the larger the number of independent languages, springing up in every valley, and overshadowing the smallest island.

Ἴδαν ἐς πολύδενδρον ἀνὴρ ὑλατόμος ἐνδών
Παπταίνει, παρέοντος ἄδην, πόθεν ἄρξεται ἔργου. *

We are bewildered by the variety of plants, of birds, and fishes, and insects, scattered with lavish prodigality over land and sea;—but what is the living wealth of that Fauna as compared to the winged words which fill the air with unceasing music! What are the scanty relics of fossil plants and animals, compared to the storehouse of what we call the dead languages! How then can we explain it that for centuries and centuries, while collecting beasts, and birds, and fishes, and

* Theokritos, xvii, 9.

insects, while studying their forms, from the largest down to the smallest and almost invisible creatures, man has passed by this forest of speech, without seeing the forest, as we say in German, for the very number of its trees, (*Man sah den Wald vor lauter Bäumen nicht,*) without once asking how this vast currency could have been coined, what inexhaustible mines could have supplied the metal, what cunning hands could have devised the image and superscription,—without once wondering at the countless treasure inherited by him from the fathers of the human race?

Let us now turn our attention in a different direction. After it had been discovered that there was this great mass of material to be collected, to be classified, to be explained, what has the Science of Language, as yet, really accomplished? It has achieved much, considering that real work only began about fifty years ago; it has achieved little, if we look at what still remains to be done.

The first discovery was that languages admit of classification. Now this was a very great discovery, and it at once changed and raised the whole character of linguistic studies. Languages might have been, for all we know, the result of individual fancy or poetry; words might have been created at random, or been fixed by a convention, more or less arbitrary. In that case a scientific classification would have been as impossible as it is if applied to the changing fashions of the day. Nothing can be classified, nothing can be scientifically ruled and ordered, except what has grown up in natural order and according to rational rule.

Out of the great mass of speech that is now accessible to the student of language, a number of so-called families have been separated, such as the Aryan,

the Semitic, the Ural-Altaic, the Indo-Chinese, the Dravidian, the Malayo-Polynesian, the Kafir or Bâ-ntu in Africa, and the Polysynthetic dialects of America. The only classes, however, which have been carefully examined, and which alone have hitherto supplied the materials for what we might call the Philosophy of Language, are the Aryan and the Semitic, the former comprising the languages of India, Persia, Armenia, Greece, and Italy, and of the Celtic, Teutonic and Sclavonic races; the latter consisting of the languages of the Babylonians, the Syrians, the Jews, the Ethiopians, the Arabs. These two classes include, no doubt, the most important languages of the world, if we measure the importance of languages by the amount of influence exercised on the political and literary history of the world by those who speak them. But considered by themselves, and placed in their proper place in the vast realm of human speech, they describe but a very small segment of the entire circle. The completeness of the evidence which they place before us in the long series of their literary treasures, points them out in an eminent degree as the most useful subjects on which to study the anatomy of speech, and nearly all the discoveries that have been made as to the laws of language, the process of composition, derivation, and inflection, have been gained by Aryan and Semitic scholars. Far be it from me, therefore, to underrate the value of Aryan and Semitic scholarship for a successful prosecution of the Science of Language. But while doing full justice to the method adopted by Semitic and Aryan scholars in the discovery of the laws that regulate the growth and decay of language, we must not shut our eyes to the fact that our field of observation has

been thus far extremely limited, and that we should act in defiance of the simplest rules of sound induction, were we to generalize on such scanty evidence. Let us but clearly see what place these two so-called families, the Aryan and Semitic, occupy in the great kingdom of speech. They are in reality but two centres, two settlements of speech, and all we know of them is their period of decay, not their period of growth, their descending, not their ascending career, their Being, as we say in German, not their Becoming, (*Ihr Gewordensein, nicht ihr Werden*). Even in the earliest literary documents both the Aryan and Semitic speech appear before us as fixed and petrified. They had left for ever that stage during which language grows and expands until it is arrested in its exuberant fertility by means of religious or political concentration, by means of oral tradition, or finally by means of a written literature. In the natural history of speech, writing, or, what in early times takes the place of writing, oral tradition, is something merely accidental. It represents a foreign influence which, in natural history, can only be compared to the influence exercised by domestication on plants and animals. Language would be language, nay, would be more truly language, if the idea of a literature, whether oral or written, had never entered men's minds; and however important the effects produced by this artificial domestication of language may be, it is clear that our ideas of what language is in a natural state, and therefore what Sanskrit and Hebrew, too, must have been before they were tamed and fixed by literary cultivation, ought not to be formed from an exclusive study of Aryan and Semitic speech. I maintain that all that we call Aryan and Semitic speech, wonderful as its literary representatives may be, consists

of neither more nor less than so many varieties which all owe their origin to only two historical concentrations of wild unbounded speech; nay, however perfect, however powerful, however glorious in the history of the world,—in the eyes of the student of language, Sanskrit, Greek, and Latin, Hebrew, Arabic and Syriac, are what a student of natural history would not hesitate to call "monstra," unnatural, exceptional formations which can never disclose to us the real character of language left to itself to follow out its own laws without let or hindrance. For that purpose a study of Chinese and the Turanian dialects, a study even of the jargons of the savages of Africa, Polynesia and Melanesia is far more instructive than the most minute analysis of Sanskrit and Hebrew. The impression which a study of Greek and Latin and Sanskrit leaves on our minds is, that language is a work of art, most complicated, most wonderful, most perfect. We have given so many names to its outward features, its genders and cases, its tenses and moods, its participles, gerunds and supines, that at last we are frightened at our own devices. Who can read through all the so-called irregular verbs, or look at the thousands and thousands of words in a Greek Dictionary without feeling that he moves about in a perfect labyrinth? How then, we ask, was this labyrinth erected? How did all this come to be? We ourselves, speaking the language which we speak, move about, as it were, in the innermost chambers, in the darkest recesses of that primeval palace, but we cannot tell by what steps and through what passages we arrived there, and we look in vain for the thread of Ariadne which in leading us out of the enchanted castle of our language, would disclose to us

the way by which we ourselves, or our fathers and forefathers before us, entered into it.

The question how language came to be what it is, has been asked again and again. Even a schoolboy, if he possesses but a grain of the gift of wondering, must ask himself why mensa means one table, and mensæ many tables; why I love should be amo, I am loved amor, I shall love amabo, I have loved amavi, I should have loved amavissem. Until very lately two answers only could have been given to such questions. Both sound to us almost absurd, yet in their time they were supported by the highest authorities. Either, it was said, language, and particularly the grammatical framework of language was made by convention, by agreeing to call one table mensa, and many tables mensæ; or, and this was Schlegel's view, language was declared to possess an organic life, and its terminations, prefixes, and suffixes were supposed to have sprouted forth from the radicals and stems and branches of language, like so many buds and flowers. To us it seems almost incredible that such theories should have been seriously maintained, and maintained by men of learning and genius. But what better answer could they have given? What better answer has been given even now? We have learnt something, chiefly from a study of the modern dialects, which often repeat the processes of ancient speech, and thus betray the secrets of the family. We have learnt that in some of the dialects of modern Sanskrit, in Bengali for instance*, the plural is

* In my essay "On the Relation of Bengali to the Aryan and Aboriginal Languages of India," published in 1847, I tried to explain these plural suffixes, such as dig, gana, *gâti*, varga, dala. I had translated the last word by band, supposing from Wilson's Dictionary, and from the *Śabda-kalpa-druma* that dala could be used in the sense of band or multitude. I doubt, however, whether dala is ever used in Sanskrit in

formed, as it is in Chinese, Mongolian, Turkish, Finnish, Burmese and Siamese, also in the Dravidian and Malayo-Polynesian dialects, by adding a word expressive of plurality, and then appending again the terminations of the singular. We have learnt from French how a future, je parlerai, can be formed by an auxiliary verb: "I to speak have" coming to mean, I shall speak. We have learnt from our own language, whether English or German, that suffixes, such as head in godhead, ship in ladyship, dom in kingdom, were originally substantives, having the meaning of quality, shape and state. But I doubt whether even thus we should have arrived at a thorough understanding of the real antecedents of language, unless, what happened in the study of the stratification of the earth, had happened in the study of language. If the formation of the crust of the earth had been throughout regular and uniform, and if none of the lower strata had been tilted up, so that even those who run might read, no shaft from the surface could have been sunk deep enough to bring the geologist from the tertiary down to the Silurian rocks. The same in language. Unless some languages

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that sense, and I feel certain that it was not used in that sense with sufficient frequency to account for its adoption in Bengali. Dr. Friedrich Müller in his useful abstracts of some of the grammars discovered by the "Novara" in her journey round the earth (1857—59,) has likewise referred dal to the Sanskrit dala, but he renders the English band in German by "Band," hoop, ribbon, a meaning which dala never has, whereas I meant it for band, a band of robbers, the German "Bande." Might dala in Bengali be the Dravidian tala or dala, a host, a crowd, which Dr. Caldwell (p. 197) mentions as a possible etymon of the pluralising suffix in the Dravidian languages? The principle according to which these plurals are formed is very different historically from that which led to the formation of the plural in Persian. Here, both ân and hâ are remnants of decayed plural terminations, not collective words added to the base.

had been arrested in their growth during their earlier stages, and had remained on the surface in this primitive state, exposed only to the decomposing influence of atmospheric action, and to the ill-treatment of literary cultivation, I doubt whether any scholar would have had the courage to say that at one time Sanskrit was like unto Chinese, and Hebrew no better than Malay. In the successive strata of language thus exposed to our view, we have in fact, as in Geology, the very thread of Ariadne which, if we will but trust to it, will lead us out of the dark labyrinth of language in which we live, by the same road by which we and those who came before us, first entered into it. The more we retrace our steps, the more we advance from stratum to stratum, from story to story, the more shall we feel almost dazzled by the daylight that breaks in upon us; the more shall we be struck, no longer by the intricacy of Greek or Sanskrit grammar, but by the marvellous simplicity of the original warp of human speech, as preserved, for instance, in Chinese; by the childlike contrivances, that are at the bottom of Paulo-post Futures and Conditional Moods.

Let no one be frightened at the idea of studying a Chinese grammar. Those who can take an interest in the secret springs of the mind, in the elements of pure reason, in the laws of thought, will find a Chinese grammar most instructive, most fascinating. It is the faithful photograph of man in his leading-strings, trying the muscles of his mind, groping his way, and so delighted with his first successful grasps that he repeats them again and again. It is child's play, if you like, but it displays, like all child's play, that wisdom and strength which is perfect in the mouth of babes and sucklings. Every shade of thought that finds

expression in the highly finished and nicely balanced system of Greek tenses, moods, and particles can be expressed and has been expressed in that infant language by words that have neither prefix nor suffix, no terminations to indicate number, case, tense, mood or person. Every word in Chinese is monosyllabic, and the same word without any change of form, may be used as a noun, a verb, an adjective, an adverb, or a particle. Thus *ta*, according to its position in a sentence, may mean great, greatness, to grow, very much, very.*

And here a very important observation has been made by Chinese grammarians, an observation which, after a very slight modification and expansion, contains indeed the secret of the whole growth of language from Chinese to English. If a word in Chinese is used with the *bonâ fide* signification of a noun or a verb, it is called a full word (shi-tsé;) if it is used as a particle or with a merely determinative or formal character, it is called an empty word (hiu-tsé.)† There is as yet no outward difference between full and empty words in Chinese, and this renders it all the more creditable to the grammarians of China that they should have perceived the inward distinction, even in the absence of any outward signs.

Let us learn then from Chinese grammarians this general lesson, that words may become empty, and without restricting the meaning of empty words as they

* Stanislas Julien, Exercises Pratiques, p. 14.

† Endlicher, Chinesische Grammatik, § 122. Wade, Progressive Course, On the parts of speech, p. 102. A different division of words adopted by Chinese grammarians is that into dead and live words, ssè-tsé and sing-tsé, the former comprising nouns, the latter verbs. The same classes are sometimes called tsing-tsé and ho-tsé, unmoved and moved words. See Endlicher, Chinesische Grammatik, § 219.

do, let us use that term in the most general sense, as expressive of the fact that words may lose their original meaning.

Let us add to this another observation which the Chinese could not well have made, but which we shall see confirmed again and again in the history of language, *viz.* that empty words, or, as we may also call them, dead words, are most exposed to phonetic decay.

It is clear then that, with these two preliminary observations, we can imagine three conditions of language :—

1.) There may be languages in which all words, both empty and full, retain their independent form. Even words which are used when we should use mere suffixes or terminations, retain their outward integrity in Chinese. Thus, in Chinese, *gin* means man, tu means number or heap, *gin*-tu, man-number. In this compound both *gin* and tu continue to be felt as independent words, more so than in our own compound man-kind; but nevertheless tu has become empty, it only serves to determine the preceding word *gin*, man, and tells us the quantity or number in which *gin* shall be taken. The compound answers in intention to our plural, but in form it is wide apart from men, the plural of man.

2.) Empty words may lose their independence, may suffer phonetic decay, and dwindle down to mere suffixes and terminations. Thus in Burmese the plural is formed by to, in Finnish, Mordvinian and Ostiakian by t. As soon as to ceases to be used as an independent word in the sense of number, it becomes an empty, or, if you like, an obsolete word, that has no meaning except as the exponent of plurality; nay, at last, it

may dwindle down to a mere letter, which is then called by grammarians the termination of the plural. In this second stage phonetic decay may well-nigh destroy the whole body of empty words, but,—and this is important,—no full words, no radicals are as yet attacked by that disintegrating process.

3.) Phonetic decay may advance, and does advance still further. Full words also may lose their independence, and be attacked by the same disease that had destroyed the original features of suffixes and prefixes. In this state it is frequently impossible to distinguish any longer between the radical and formative elements of words.

If we wished to represent these three stages of language algebraically, we might represent the first by RR, using R as the symbol of a root which has suffered no phonetic decay; the second, by R + ρ, or ρ + R, or ρ + R + ρ, representing by ρ an empty word that has suffered phonetic change; the third, by rρ, or ρr, or ρrρ, when both full and empty words have been changed, and have become welded together into one indistinguishable mass through the intense heat of thought, and by the constant hammering of the tongue.

Those who are acquainted with the works of Humboldt will easily recognise in these three stages or strata, a classification of language first suggested by that eminent philosopher. According to him languages can be classified as isolating, agglutinative, and inflectional, and his definition of these three classes agrees in the main with the description just given of the three strata or stages of language.

But what is curious is that this threefold classification, and the consequences to which it leads, should not at once have been fully reasoned out; nay, that a system

most palpably erroneous should have been founded upon it. We find it repeated again and again in most works on Comparative Philology, that Chinese belongs to the isolating class, the Turanian language to the agglutinative, the Aryan and Semitic to the inflectional; nay, Professor Pott* and his school seem convinced that no evolution takes place from isolating to agglutinative and from agglutinative to inflectional speech. We should thus be forced to believe that by some inexplicable grammatical instinct, or by some kind of inherent necessity, lan-

* Professor Pott in his article, entitled "Max Müller und die Kennzeichen der Sprachverwandtschaft," published in 1855 in the Journal of the German Oriental Society, vol. ix, p. 412, says in confutation of Bunsen's view of a real historical progress of language from the lowest to the highest stage: "So cautious an inquirer as W. von Humboldt declines expressly in the last chapter of his work on the 'Diversity of the structure of human language' (p. 414) any conclusions as to a real historical progress from one stage of language to another, or at least does not commit himself to any definite opinion. This is surely something very different from that gradual progress, and it would be a question whether by admitting such an historical progress from stage to stage, we should not commit an absurdity hardly less palpable than by trying to raise infusoria into horses or still further into men. Mr. Bunsen, it is true, does not hesitate to call the monosyllabic idiom of the Chinese an inorganic formation. But how can we get from an inorganic to an organic language? In nature such a thing would be impossible. No stone becomes a plant, no plant a tree by however wonderful a metamorphosis, except, in a different sense, by the process of nutrition, *i. e.* by regeneration. The former question which Mr. Bunsen answers in the affirmative, is disposed of by him with the short dictum: 'The question whether a language can be supposed to begin with inflections, appears to us simply an absurdity'—but unfortunately he does not condescend by a clear illustration to make that absurdity palpable. Why in inflectional languages should the grammatical form always have added itself to the matter subsequently and *ab extra*? Why should it not partially from the beginning have been created with it and in it, as having a meaning with something else, but not having antecedently a meaning of its own?"

guages were from the beginning created as isolating, or agglutinative, or inflectional, and must remain so to the end. It is strange that those scholars who hold that no transition is possible from one form of language to another, should not have seen that there is really no language that can be strictly called either isolating, or agglutinative, or inflectional, and that the transition from one stage to another is constantly taking place under our very eyes. Even Chinese is not free from agglutinative forms, and the more highly developed among the agglutinative languages show the clearest traces of incipient inflection. The difficulty is not to show the transition of one stratum of speech into another, but rather to draw a sharp line between the different strata. The same difficulty was felt in Geology, and led Sir Charles Lyell to invent such pliant names as Eocene, Meiocene, and Pleiocene, names which indicate a mere dawn, a minority, or a majority of new formations, but do not draw a fast and hard line, cutting off one stratum from the other. Natural growth, and even merely mechanical accumulation and concretion, here as elsewhere, are so minute and almost imperceptible that they defy all strict scientific terminology, and force upon us the lesson that we must be satisfied with an approximate accuracy. For practical purposes Humboldt's classification of languages may be quite sufficient, and we have no difficulty in classing any given language, according to the prevailing character of its formation, as either isolating, or agglutinative, or inflectional. But when we analyse each language more carefully we find there is none exclusively isolating, or exclusively agglutinative, or exclusively inflectional. The power of composition which is retained unimpaired through every stratum,

can at any moment place an inflectional on a level with an isolating language. A compound such as the Sanskrit go-duh, cow-milking, differs little, if at all, from the Chinese ngau-ü, cow-milk, before it takes the terminations of the nominative, which is impossible in Chinese. So again in English New-Town, in Greek Nea-polis, would be simply agglutinative compounds. Even Newton would still belong to the agglutinative stratum, but Naples would have to be classed as belonging to the inflectional stage. Finnish, Hungarian, Turkish, and the Dravidian languages belong in the main to the agglutinative stratum, but having received a considerable amount of literary cultivation, they all alike exhibit forms which in every sense of the word are inflectional. If in Finnish, for instance, we find käsi, in the singular, hand, and kädet, in the plural, hands, we see that phonetic corruption has clearly reached the very core of the noun, and given rise to a plural more decidedly inflectional than the Greek χεῖρ-ες, or the English hand-s, In Tamil, where the suffix of the plural is ga*l*, we have indeed a regular agglutinative form in kei-ga*l*, hands, but if the same plural suffix ga*l* is added to kal, stone, the euphonic rules of Tamil require not only a change in the suffix, which becomes ka*l*, but likewise a modification in the body of the word, kal being changed to kar. We thus get the plural karkal which in every sense of the word is an inflectional form. In this plural suffix ga*l*, Dr. Caldwell has recognised the Dravidian ta*l*a or da*l*a, a host, a crowd; and though the evidence in support of this etymology may not be entirely satisfactory, the steps by which the learned author of the Comparative Grammar of the Dravidian languages has traced the common plural termination

lu in Telugu back to the same original suffix ka*l* admit of little doubt.

Evidence of a similar kind may easily be found in any grammar, whether of an isolating, agglutinative or inflectional language, wherever there is evidence as to the ascending or descending progress of any particular form of speech. Everywhere amalgamation points back to agglutination, and agglutination back to juxtaposition, everywhere isolating speech tends towards terminational forms, and terminational forms become inflectional.

I may best be able to explain the view commonly held with regard to the strata of language by a reference to the strata of the earth. Here, too, where different strata have been tilted up, it might seem at first sight as if they were arranged perpendicularly and side by side, none underlying the other, none presupposing the other. But as the geologist on the strength of more general evidence has to reverse this perpendicular position, and to re-arrange his strata in their natural order, and as they followed each other horizontally, the student of language too is irresistibly driven to the same conclusion. No language can by any possibility be inflectional without having passed through the agglutinative and isolating stratum; no language can be agglutinative without clinging with its roots to the underlying stratum of isolation. Unless Sanskrit and Greek and Hebrew had passed through the agglutinative stratum, nay unless, at some time or other, they had been no better than Chinese, their present form would be as great a miracle as the existence of chalk (and the strata associated with it) without an underlying stratum of oolite (and the strata associated with it;) or a stratum of oolite

unsupported by the trias or system of new red sandstone. Bunsen's dictum that the question whether a language can begin with inflections, implies an absurdity, may have seemed too strongly worded: but if he took inflections in the commonly received meaning, in the sense of something that may be added or removed from a base in order to define or to modify its meaning, then surely the simple argument *ex nihilo nihil fit* is sufficient to prove that the inflections must have been something by themselves, before they became inflections relatively to the base, and that the base too must have existed by itself, before it could be defined and modified by the addition of such inflections. But we need not depend on purely logical arguments, when we have historical evidence to appeal to. As far as we know the history of language, we see it everywhere confined within those three great strata or zones which we have just described. There are inflectional changes, no doubt, which cannot as yet be explained, such as for instance the m in the accusative singular of masculine, feminine, and in the nominative of neuter nouns; or the change of vowels between the Hebrew Piel and Pual, Hiphil and Hophal, where we might feel tempted to admit formative agencies different from juxtaposition and agglutination. But if we consider how in Sanskrit the Vedic instrumental plural, asvebhis, (Lat. equobus,) becomes before our very eyes asvais, (Lat. equis;) and how such changes as Bruder, brother, and Brüder, brethren, Ich weiss, I know, A.S. wât, and Wir wissen, we know, A.S. wit-on, have been explained as the results of purely mechanical, *i. e.* agglutinative proceedings, we need not despair of further progress in the same direction. One thing is certain, that wherever inflection has yielded to a

rational analysis, it has invariably been recognized as the result of a previous agglutination, and wherever agglutination has been traced back to an earlier stage, that earlier stage has been simple juxtaposition. The primitive blocks of Chinese and the most perplexing agglomerates of Greek can be explained as the result of one continuous formative process, whatever the material elements may be on which it was exercised; nor is it possible even to imagine in the formation of language more than these three strata through which hitherto all human speech has passed. All we can do is to subdivide each stratum, and thus, for instance, distinguish in the second stratum the suffixing (R + ρ) from the prefixing (ρ + R), and from the affixing (ρ + R + ρ) languages. A fourth class, the infixing or incapsulating languages, are but a variety of the affixing class, for what in Bask or in the polysynthetic dialects of America has the appearance of actual insertion of formative elements into the body of a base, can be explained more rationally by the former existence of simpler bases to which modifying suffixes or prefixes have once been added, but not so firmly as to exclude the addition of new suffixes at the end of the base, instead of, as with us, at the end of the compound. If we could say in Greek δεικ-μι-νυ, instead of δεικ-νυ-μι, or in Sanskrit yu-mi-na-g, instead of yu-na-*g*-mi, we should have a real beginning of so-called incapsulating formations. *

A few instances will place the normal progress of language from stratum to stratum more clearly before our eyes. We saw that in Chinese every word is monosyllabic, every word tells, and there are, as yet,

* Cf. D. G. Brinton, The Myths of the New World, p. 6, note.

no suffixes by which one word is derived from another, no casé terminations by which the relation of one word to another could be indicated. How, then, does Chinese distinguish between the son of the father, and the father of the son? Simply by position. Fú is father, tzé, son; therefore fú tzé is son of the father, tzé fú, father of the son. This rule admits of no exception but one. If a Chinese wants to say a wine glass, he puts wine first and glass last, as in English. If he wants to say, a glass of wine, he puts glass first and wine last. Thus i-pei thsieou, a cup of wine; thsieou pei, a wine-cup. If, however, it seems desirable to mark the word which is in the genitive more distinctly, the word tchi may be placed after it, and we may say, fú tchi tzé, the son of the father. In the Mandarin dialect this tchi has become ti, and is added so constantly to the governed word, that, to all intents and purposes, it may be treated as what we call the termination of the genitive. Originally this tchi was a relative pronoun, and it continues to be used as such in the ancient Chinese.*

It is perfectly true that Chinese possesses no derivative suffixes; that it cannot derive, for instance, kingly from a noun, such as king, or adjectives like visible and invisible from a verb videre, to see. Yet the same idea which we express by invisible, is expressed without difficulty in Chinese, only in a different way. They say kân-pu-*kien*, "behold-not-see," and this to them conveys the same idea as the English invisible.

* Julien, Exercises pratiques, p. 120. Endlicher, Chinesische Grammatik, § 161. See also Nöldeke, Orient und Occident, i, p. 759: Grammar of the Bornu language (London, 1853), p. 55, "In the Treaty the genitive is supplied by the relative pronoun agu, singularly corroborative of the Rev. R. Garnett's theory of the genitive case."

We cannot in Chinese derive from ferrum, iron, a new substantive ferrarius, a man who works in iron, a blacksmith; ferraria, an iron mine, and again ferrariarius, a man who works in an iron mine. All this is possible in an inflectional language only. But it is not to be supposed that in Chinese there is an independent expression for every single conception, even for those which are clearly secondary and derivative. If an arrow in Chinese is shi, then a maker of arrows, (in French fléchier, in English fletcher,) is called an arrow-man, shi-*gin*. Shui means water, fu, man; hence shui-fu, a water man, a water carrier. The same word shui, water, if followed by sheu, hand, stands for steersman, literally, water-hand. Kin means gold, tsiang, maker; hence kin-tsiang, a gold-smith. Shou means book, sheu, hand; hence shou-sheu, a writer, literally, a book-hand.

A transition from such compounds to really agglutinative speech is extremely easy. Let sheu, in the sense of hand, become obsolete, and be replaced in the ordinary language by another word for hand; and let such names as shu-sheu, author, or shui-sheu, steersman, be retained, and the people who speak this language will soon accustom themselves to look upon sheu as a mere derivative, and use it by a kind of false analogy, even where the original meaning of sheu, hand, would not have been applicable *.

* "Time changes the meaning of words as it does their sound. Thus many old words are retained in compounds, but have lost their original signification. *E. g.* 'k'eu, mouth, has been replaced in colloquial usage by 'tsui, but it is still employed extensively in compound terms and in derived senses. Thus k'wai' 'k'eu, a rapid talker, .men 'k'eu, door, ,kwan 'k'eu, custom house. So also muh, the original word for eye, has given place to 'yen, tsing or 'yen alone.

We can watch the same process even in comparatively modern languages. In Anglo-Saxon, for instance, hâd means state, order. It is used as an independent word, and continued to be used as late as Spenser, who wrote :—

> Cuddie, I wote thou kenst little good,
> So vainly t' advaunce thy headlesse hood.

After a time, however, hâd, as an independent word, was lost, and its place taken by more classical expressions, such as habit, nature, or disposition. But there remained such compounds as man-hâd, the state of man, God-hâd, the nature of God; and in these words the last element, being an empty word and no longer understood, was soon looked upon as a mere suffix. Having lost its vitality, it was all the more exposed to phonetic decay, and became both hood and head.

Or, let us take another instance. The name given to the fox in ancient German poetry was Regin-hart. Regin in Old High German means thought or cunning, hart, the Gothic hardu, means strong. This hart* corresponds to the Greek κράτος which, in its adjectival form of κρατης, forms as many proper names in Greek as hart in German. In Sanskrit the same word exists as kratu, meaning intellectual rather than bodily strength, a shade of meaning which is still perceivable even in the German hart, and in the English hard

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It is, however, employed with other words in derived senses. *E. g.* muh hia', at present; muh luh, table of contents.

"The primitive word for head 'sheu, has been replaced by .t'eu, but is retained with various words in combination. *E. g.* tseh 'sheu, robber chief."

Edkins, Grammar of the Chinese Colloquial Language, 2nd edition, 1864, p. 100.

* Grimm, Deutsche Grammatik, ii, 339.

and hardy. Reginhart, therefore, was originally a compound, meaning "thought-strong," strong in cunning. Other words formed in the same or a very similar manner are :—Peranhart and Bernhart, literally, bear-minded, or bold like a bear; Eburhart, boar-minded; Engil-hart, angel-minded; Gothart, god-minded; Eginhart, fierce-minded; Hugihart, wise-minded or strong in thought, the English Hogarth. In Low German the second element, hart, lost its h and became ard. This ard ceased to convey any definite meaning, and though in some of the words which are formed by ard we may still discover its original power, it soon became a mere derivative, and was added promiscuously to form new words. In the Low German name for the fox, Reinaert, neither the first nor the second word tells us anything, and the two words together have become a mere proper name. In other words the first portion retains its meaning, but the second, ard, is nothing more but a suffix. Thus we find the Low German dronk-ard, a drunkard; dick-ard, a thick fellow; rik-ard, a rich fellow; gêrard, a miser. In English sweet-ard, originally a very sweet person, has been changed and resuscitated as sweet-heart,* by the same process which changed shamefast into shamefaced. But, still more curious, this suffix ard, which had lost all life and meaning in Low German, was taken over as a convenient derivative by the Romance languages. After having borrowed a number of words such as renard, fox, and proper names like Bernard, Richard, Gerard, the framers of the new Romance

* Cf. the German Liebhart, mignon, in Anshelm, i, 335. Grimm, Deutsche Grammatik, iii, 707.

dialects used the same termination even at the end of Latin words. Thus they formed not only many proper names, like Abeillard, Bayard, Brossard, but appellations like leccardo, a gourmand, linguardo, a talker, criard, a crier, codardo, Prov. coart, Fr. couard, a coward.* That a German word hart should become a Romance suffix may seem strange; yet we no longer hesitate to use even Hindustani words as English suffixes. In Hindustani válá is used to form many substantives. If Dilli is Delhi, then Dilli válá is a man of Delhi. Go is cow, go-válá a cow-herd, contracted into gválá. Innumerable words can thus be formed, and as the derivative seemed handy and useful, it was at last added even to English words, for instance in "Competition wallah."

These may seem isolated cases, but the principles on which they rest pervade the whole structure of language. It is surprising to see how much may be achieved by an application of those principles, how large results may be obtained by the smallest and simplest means. By means of the single radical î or yâ, (also ya), which in the Aryan languages means to go or to send, the almost unconscious framers of Aryan grammar formed not only their neuter, denominative and causative verbs, but their passives, their optatives, their futures, and a considerable number of substantives and adjectives. Every one of these formations, in Sanskrit as well as in Greek, can be explained, and has been explained, as the result of an agglutination between any given verbal root and the radical î or yâ. There is, for instance, a root nak, expressive of perishing or destruction. We have it in nak, night; Latin nox,

* Diez, Grammatik, ii, 358. Grimm, Deutsche Grammatik, ii, p. 340, 706.

Greek νύξ, meaning originally the waning, the disappearing, the death of day. We have the same root in composition, as, for instance, *gîva*-nak, life-destroying; and by means of suffixes Greek has formed from it νεκ-ρός, a dead body, νέκ-υς, dead, and νέκυες, in the plural, the departed. In Sanskrit this root is turned into a simple verb, nas-a-ti, he perishes. But in order to give to it a more distinctly neuter meaning, a new verbal base is formed by composition with ya, nas-ya-ti, he goes to destruction, he perishes.

By the same or a very similar process denominative verbs are formed in Sanskrit to a very large extent. From râgan, king, we form râgâ-ya-te, he behaves like a king, literally, he goes the king, he acts the king, il a l'allure d'un roi. From kumârî, girl, kûmârâ-ya-te, he behaves like a girl, etc. *

After raising nas to nâsa, and adding the same radical ya, Sanskrit produces a causative verb, nâsa-ya-ti, he sends to destruction, the Latin nêcare.

In close analogy to the neuter verb nasyati, the regular passive is formed in Sanskrit by composition with ya, but by adding, at the same time, a different set of personal terminations. Thus nas-ya-ti means he perishes, while nas-ya-te means he is destroyed.

The usual terminations of the Optative in Sanskrit are:

yâm, yâs, yât, yâma, yâta, yus,

or, after bases ending in vowels:

iyam, is, it, ima, ita, iyus.

In Greek:

ιην, ιης, ιη, ιημεν, ιητε, ιην,

* See Max Müller, Sanskrit Grammar, §. 497.

or, after bases ending in o:

ιμι, ις, ι, ιμεν, ιτε, ιεν.

In Latin:

iêm,	iès,	iet,	—	—	ient,
îm,	îs,	it,	îmus,	îtis,	int.

If we add these terminations to the root AS, to be, we get the Sanskrit: (as-yâm)

syâm, syâs, syât, syâma, syâta, syus.

Greek: (ἐσ-ιην)

εἴην, εἴης, εἴη, εἴημεν, εἴητε, εἶεν.

Latin: (es-iem)

siêm,	siês,	siet,	—	—	sient,
sîm,	sîs,	sit,	sîmus,	sîtis,	sint.

If we add the other termination to a verbal base ending in certain vowels, we get the Sanskrit: (bhara-iyam)

bharêyam, bharês, bharêt, bharêma, bharêta, bharêyus.

Greek: (φερο-ιμι)

φέρο-ιμι, φέρο-ις, φέρο-ι, φέρο-ιμεν, φέρο-ιτε, φέρο-ιεν.

Latin: (fere-im)

ferêm, ferês, feret, ferêmus, ferêtis, ferent.

Here we have clearly the same auxiliary verb, i or ya, again, and we are driven to admit that what we now call an optative or potential mood, was originally a kind of future, formed by ya, to go, very much like the French je vais dire, I am going to say, I shall say. The future would afterwards assume the character of a civil command, as "thou wilt go" may be used even by us in the sense of "go," and the

imperative would dwindle away into a potential, as we may say: "go and you will see," in the same sense as, if you go, you will see.

The terminations of the future are:

Sanskrit:

syâmi, syasi, syati, syâmas, syâtha, syanti.

Greek:

σω, σεις, σει, σομεν, σετε, σουτι.

In these terminations we have really two auxiliary verbs, the verb as, to be, and ya, to go, and by adding them to any given root, as, for instance, DA, to give, we have the Sanskrit: (dâ-as-yâ-mi)

dâ-s-yâ-mi, dâ-s-ya-si, dâ-s-ya-ti, dâ-s-yâ-mas, dâ-s-ya-tha, dâ-s-ya-nti,

Greek: (δω-εσ-yω)

δώ-σ-ω,* δώ-σ-εις, δώ-σ-ει, δώ-σ-ομεν, δώ-σ-ετε, δώ-σ-ουσι.

A verbal form of very frequent occurrence in Sanskrit is the so-called gerundive participle which signifies that a thing is necessary or proper to be done. Thus from budh, to know, is formed bodh-ya-s, one who is to be known, cognoscendus; from guh, to hide, guh-ya-s or goh-ya-s, one who is to be hidden, literally, one who goes to a state of hiding or being hidden; from ya*g*, to sacrifice, yâ*g*-ya-s, one who is or ought to be worshipped. Here, again, what is going to be becomes gradually what will be, and lastly, what shall be. In Greek we find but few analogous forms, such as ἅγιος, holy, στύγ-ι-ος, to be hated; in Latin, ex-im-i-us,

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* In δώ-σω, for δωσyω, the y is lost in Greek as usual. In other verbs s and y are both lost. Hence τενεσyω becomes τενεσω, and τενῶ, the so-called Attic future.

to be taken out; in Gothic anda-nêm-ja, to be accepted, agreeable, German angenehm.*

While the gerundive participles in ya are formed on the same principle as the verbal bases in ya of the passive, a number of substantives in ya seem to have been formed in close analogy to the bases of denominative verbs, or the bases of neuter verbs, in all of which the derivative ya expresses originally the act of going, behaving, and at last of simple being. Thus, from vid, to know, we find in Sanskrit vid-yâ, knowing, knowledge; from *si*, to lie down, sayyâ, resting. Analogous forms in Latin are gaud-i-um, stud-i-um, or, with feminine terminations, in-ed-i-a, in-vid-i-a, per-nic-i-es, scab-i-es; in Greek, μαν-ί-α, ἀμαρτ-ί-α or ἀμάρτ-ι-ον, in German numerous abstract nouns in i and e. †

This shows how much can be achieved, and has been achieved in language with the simplest materials. Neuter, denominative, causative, passive verbs, optatives and futures, gerundives, adjectives, and substantives, all are formed by one and the same process, by means of one and the same root. It is no inconsiderable portion of grammar which has thus been explained by this one root ya, to go, and we learn again and again how simple and yet how wonderful are the ways of

* See Bopp, Vergleichende Grammatik, §§ 897—898. These verbal adjectives should be carefully distinguished from nominal adjectives, such as Sanskrit div-ya-s, divinus, originally div-i-a-s, *i. e.* divi-bhavas, being in heaven; οἰκεῖος, domesticus, originally οἴκει-ο-ς, being in the house. These are adjectives formed from old locatives, just as in Bask we can form from etche, house, etche-tic, of the house, and etche-tic-acoa, he who is of the house; or from seme, son, semea-ren, of the son, and semea-ren-a, he who is of the son. See W. J. van Eys, Essai de Grammaire de la langue Basque, 1867, p. 16.

† Bopp's Vergleichende Grammatik, §§ 888—898.

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language, if we follow them up from stratum to stratum to their original starting-point.

Now what has happened in these cases, has happened over and over again in the history of language. Everything that is now formal, not only derivative suffixes, but everything that constitutes the grammatical framework and articulation of language, was originally material. What we now call the terminations of cases, were mostly local adverbs; what we call the personal endings of verbs, were personal pronouns. Suffixes and affixes were all independent words, nominal, verbal, or pronominal; there is, in fact, nothing in language that is now empty, or dead, or formal, that was not originally full, and alive, and material. It is the object of Comparative Grammar to trace every formal or dead element back to its life-like form; and though this resuscitating process is by no means complete, nay, though in several cases it seems hopeless to try to discover the living type from which proceeded the petrified fragments which we call terminations or suffixes, enough evidence has been brought together to establish on the firmest basis this general maxim, that Nothing is dead in any language that was not originally alive; that nothing exists in a tertiary stratum that does not find its antecedents and its explanation in the secondary or primary stratum of human speech.

After having explained as far as has been possible in so short a time, what I consider to be the right view of the stratification of human speech, I should have wished to be able to show to you how the aspect of some of the most difficult and most interesting problems of our science is changed, if we look at them again with the new light which we have gained

regarding the necessary antecedents of all language. Let me only call your attention to one of the most contested points in the Science of Language. The question whether we may assign a common origin to the Aryan and Semitic languages has been discussed over and over again. No one thinks now of deriving Sanskrit from Hebrew, or Hebrew from Sanskrit; the only question is whether at some time or other the two languages could have formed part of one and the same body of speech. There are scholars, and very eminent scholars, who deny all similarity between the two, while others have collected materials that would seem to make it difficult to assign such numerous coincidences to mere chance. Nowhere, in fact, has Bacon's observation on this radical distinction between different men's dispositions for philosophy and the sciences been more fully verified than among the students of the Science of Language:—Maximum et velut radicale discrimen ingeniorum, quoad philosophiam et scientias, illud est, quod alia ingenia sint fortiora et aptiora ad notandas rerum differentias; alia at notandas rerum similitudines..... Utrumque autem ingenium facile labitur in excessum, prensando aut gradus rerum, aut umbras.* Before, however, we enter upon an examination of the evidence brought forward by different scholars in support of their conflicting theories, it is our first duty to ask a preliminary question, viz., What kind of evidence have we any right to expect, considering that both Sanskrit and Hebrew belong, in the state in which we know them, to the inflectional stratum of speech?

Now it is quite clear that Sanskrit and Hebrew were

* Bacon, Novum Organum, i, 55.

separated long before they reached the tertiary stratum, before they became thoroughly inflectional; and that consequently they can share nothing in common that is peculiar to the inflectional stratum in each, nothing that is the result of phonetic decay, which sets in after agglutinative formations have become unintelligible and traditional. I mean, supposing that the pronoun of the first person had been originally the same in the Semitic and Aryan languages, supposing that in the Hebrew an-oki (Assyrian an-aku, Phen. anak) the last portion, oki, was originally identical with the Sanskrit ah in aham, the Greek ἐγ in ἐγ-ω, it would still be useless to attempt to derive the termination of the first person singular, whether in kâtal-ti or in ektôl, from the same type which in Sanskrit appears as mi or am, or a, in tudâ-mi, atud-am, tutod-a. There is not between Hebrew and Sanskrit the same relationship as between Sanskrit and Greek, if indeed the term of relationship is applicable even to Sanskrit and Greek,—mere dialectic varieties of one and the same type of speech.

The question then arises, Could the Semitic and Aryan languages have been identical during the second or agglutinative period? Here, as before, the answer must be, I believe, decidedly negative, for not only are the empty words which are used for derivative purposes different in each, but, what is far more characteristic, the manner in which they are added to the stems is different too. In the Aryan languages formative elements are attached to the ends of words only; in the Semitic languages they are found both at the end and at the beginning. In the Aryan languages grammatical compounds are all according to the formula $r\rho$; in the

Semitic we have formations after the formulas $r\rho$, ρr, and $\rho r\underline{\rho}$.

There remains, therefore, the first or isolating stage only in which Semitic and Aryan speech might have been identical. But even here we must make a distinction. All Aryan roots are monosyllabic, all Semitic roots have been raised to a triliteral form. Therefore it is only previous to the time when the Semitic roots assumed this secondary triliteral form that any community can be admitted between these two streams of language. Supposing we knew as an historical fact that at this early period—a period which transcends the limits of everything we are accustomed to call historical—Semitic and Aryan speech had been identical, what evidence of this union could we expect to find in the actual Semitic and Aryan languages such as we know them in their inflectional period? Let us recollect that the 100,000 words of English, nay the many hundred thousand words in all the dictionaries of the other Aryan languages, have been reduced to about 500 roots, and that this small number of roots admits of still further reduction. Let us, then, bear in mind that the same holds good with regard to the Semitic languages, particularly if we accept the reduction of all triliteral to biliteral roots. What, then, could we expect in our comparison of Hebrew and Sanskrit but a small number of radical coincidences, a similarity in the form and meaning of about 500 radical syllables, everything else in Hebrew and Sanskrit being an after-growth, which could not begin before the two branches of speech were severed once and for ever.

Again, if we look at these roots we shall find that their predicative power is throughout very general, and

therefore liable to an infinite amount of specification. A root that means to fall (Sk. pat, πίπτω) comes to mean to fly (Sk. ut-pat, πέτομαι). The root dâ, which means to give, assumes, after the preposition â, the sense of taking. The root yu, which means to join, means to separate if preceded by the preposition vi. The root ghar, which expresses brightness, may supply, and does supply in different Aryan languages, derivations expressive of brightness (gleam), warmth (Sk. gharma, heat), joy (χαίρειν), love (χάρις), growing (ger-men,) and of the colours of green (Sk. hari), yellow (gilvus, flavus), and red (Sk. harit, fulvus). In the Semitic languages this vagueness of meaning in the radical elements forms one of the principal difficulties of the student, for according as a root is used in its different conjugations, it may convey the most startling variety of conception. It is also to be taken into account that out of the very limited number of roots which at that early time were used in common by the ancestors of the Aryan and Semitic races, a certain portion may have been lost by each, so that the fact that there are roots in Hebrew of which no trace exists in Sanskrit, and *vice versâ*, would again be perfectly natural and intelligible.

It is right and most essential that we should see all this clearly, that we should understand how little evidence we are justified in expecting in support of a common origin of the Sanskrit and Aryan languages, before we commit ourselves to any opinion on this important subject. I have by no means exhausted all the influences that would naturally, nay necessarily, have contributed towards producing the differences between the radical elements of Aryan and Semitic speech, always supposing that the two sprang originally

from the same source. Even if we excluded the ravages of phonetic decay from that early period of speech, we should have to make ample allowances for the influence of dialectic variety. We know in the Aryan languages the constant play between gutturals, dentals, and labials (quinque, Sk. pan*k*a, πέντε, Aeol. πέμπε, Goth. fimf). We know the dialectic interchange of Aspirate, Media, and Tenuis, which from the very beginning has imparted to the principal channels of Aryan speech their individual character, (τρεῖς, Goth. threis, High German drei).* If this and much more could happen within the dialectic limits of one more or less settled body of speech, what must have been the chances beyond those limits? Considering how fatal to the identity of a word the change of a single consonant would be in monosyllabic languages, we might expect that monosyllabic roots, if their meaning was so general, vague, and changeable, would all the more carefully have preserved their consonantal outline. But this is by no means the case. Monosyllabic languages have their dialects no less than polysyllabic ones; and from the rapid and decisive divergence of such dialects we may learn how rapid and decisive the divergence of language must have been during the isolating period. Mr.

* Until a rational account of these changes, comprehended under the name of Lautverschiebung, is given, I shall continue to look upon them, not as the result of phonetic decay, but of dialectic growth. Mr. Scherer, in his thoughtful work "Zur Geschichte der Deutschen Sprache," has very nearly, though not quite, comprehended the meaning of my explanation, and the strange effects of dialectic change as contrasted with phonetic decay. If it is necessary to use more homely illustrations, one might say with perfect truth, that each dialect had chosen its own phonetic garment as people choose the coats and trousers which best fit them. The simile, like all similes, is imperfect, yet it is quite as good as if we compare the latter ravages of phonetic decay to the wear and tear of these phonetic suits.

Edkins, who has paid particular attention to the dialects of Chinese, states that in the northern provinces the greatest changes have taken place, eight initial and one final consonant having been exchanged for others, and three finals lost. Along the southern bank of the Yang-tsï-kiang, and a little to the north of it, the old initials are all preserved, as also through Chekiang to Fuh-kien. But among the finals, m is exchanged for n, t and p are lost, and also k, except in some country districts. Some words have two forms, one used colloquially, and one appropriated to reading. The former is the older pronunciation, and the latter more near to Mandarin. The cities of Su-cheu, Hang-cheu, Ningpo, and Wen-cheu, with the surrounding country, may be considered as having one dialect, spoken probably by thirty millions of people, *i.e.* by more than the whole population of Great Britain and Ireland. The city of Hwei-cheu has a dialect of its own, in which the soft initial consonants are exchanged for hard and aspirated ones, a process analogous to what we call Lautverschiebung in the Aryan languages. At Fu-cheu-fu, in the eastern part of the province of Kiang-si, the soft initials have likewise been replaced by aspirates. In many parts of the province of Hunan the soft initials still linger on; but in the city of Chang-sha the spoken dialect has the five tones of Mandarin, and the aspirated and other initials distributed in the same manner. In the island of Hai-nan there is a distinct approach to the form which Chinese words assume in the language of Annam. Many of the hard consonants are softened, instead of the reverse taking place as in many other parts of China. Thus ti, di, both ti in Mandarin, are both pronounced di in Hai-nan. B and p are both used for

many words whose initials are w and f in Mandarin. In the dialects of the province of Fuh-kien the following changes take place in initial consonants: k is used for h; p for f; m, b, for w; j for y; t for ch; ch for s; ng for i, y, w; n for j.* When we have clearly realised to ourselves what such changes mean in words consisting of one consonant and one vowel, we shall be more competent to act as judges, and to determine what right we have to call for more ample and more definite evidence in support of the common origin of languages which became separated during their monosyllabic or isolating stages, and which are not known to us before they are well advanced in the inflectional stage.

It might be said:—why, if we make allowance for all this, the evidence really comes to nothing, and is hardly deserving of the attention of the scholar. My answer is that it is not our fault that it should be so, but that before we lay it down as an axiom, that there can be no kind of relationship between Sanskrit and Hebrew, that they must have had different beginnings, that they represent, in fact, two independent species of human speech, it is but right that we should pause, and not turn away contemptuously from the tentative researches of scholars like Ewald, Raumer, and Ascoli. These scholars, particularly Raumer and Ascoli, have given us, as far as I can judge, far more evidence in support of a radical relationship between Hebrew and Sanskrit than, from my point of view, we are entitled to expect. I mean this as a caution in both directions. If, on one side, we ought not to demand more than we have a right to demand, we ought, on the other, not to look for, nor attempt to bring forward, more

* Edkins, Grammar, p. 84.

evidence than the nature of the case admits of. We know that words which have identically the same sound and meaning in Sanskrit, Greek, Latin, and German, cannot be the same words, because they would contravene those phonetic laws that made these languages to differ from each other. To doom cannot have any connection with the Latin damnare; to call cannot be the Greek καλεῖν, the Latin calare; the English care cannot be identified with Latin cura; nor to have with Latin habere. The same applies, only with a hundredfold greater force, to words in Hebrew and Sanskrit. If any triliteral root in Hebrew were to agree with a triliteral word in Sanskrit, we should feel certain, at once, that they are not the same, or that their similarity is purely accidental. Pronouns, numerals, and a few imitative rather than predicative names for father and mother, &c., may have been preserved from the earliest stage by the Aryan and Semitic speakers; but if scholars go beyond, and compare such words as Hebrew barak, to bless, and Latin precari; Hebrew lab, heart, and the English liver; Hebrew melech, king, and the Latin mulcere, to smoothe, to quiet, to subdue, they are in great danger, I believe, of proving too much.

Attempts have lately been made to point out a number of roots which Chinese shares in common with Sanskrit. Far be it from me to stigmatize even such researches as unscientific, though it requires an effort for one brought up in the most straitest school of Bopp, to approach such inquiries without prejudice. Yet, if conducted with care and sobriety, and particularly with a clear perception of the limits within which such inquiries must be confined, they are perfectly legitimate, far more so than the learned dogmatism with which

some of our most eminent scholars have declared a common origin of Sanskrit and Chinese as out of the question. I cannot bring myself to say that the method which Mr. Chalmers adopts in his interesting work on the "Origin of Chinese" is likely to carry conviction to the mind of the *bonâ fide* sceptic. I believe, before we compare the words of Chinese with those of any other language, every effort should be made to trace Chinese words back to their most primitive form. Here Mr. Edkins has pointed out the road that ought to be followed, and has clearly shown the great advantage to be derived from an accurate study of Chinese dialects. The same scholar has done still more by pointing out how Chinese should at first be compared with its nearest relatives, the Mongolian of the North-Turanian, and the Tibetan of the South-Turanian class, before any comparisons are attempted with more distant colonies that started during the monosyllabic period of speech. "I am now seeking to compare," he writes, "the Mongolian and Tibetan with the Chinese, and have already obtained some interesting results:

1.) A large proportion of Mongol words are Chinese. Perhaps a fifth are so. The identity is in the first syllable of the Mongol words, that being the root. The correspondence is most striking in the adjectives, of which perhaps one half of the most common are the same radically as in Chinese. *E.g.* sain, good; begen, low; ichi, right; sologai, left; chihe, straight; gadan, outside; chohon, few; logon, green; hunggun, light (not heavy). But the identity is also extensive in other parts of speech, and this identity of common roots seems to extend into the Turkish, Tatar, etc.; *e. g.* su, water, tenri, heaven.

2.) To compare Mongol with Chinese it is necessary to go back at least six centuries in the development of the Chinese language. For we find in common roots final letters peculiar to the old Chinese, *e. g.* final m. The initial letters also need to be considered from another standpoint than the Mandarin pronunciation. If a large number of words are common to Chinese, Mongol and Tatar, we must go back at least twelve centuries to obtain a convenient epoch of comparison.

3.) While the Mongol has no traces of tones, they are very distinctly developed in Tibetan. Csoma de Körös and Schmidt do not mention the existence of tones, but they plainly occur in the pronunciation of native Tibetans resident in Peking.

4.) As in the case of the comparison with Mongol, it is necessary in examining the connection of Tibetan with Chinese to adopt the old form of the Chinese with its more numerous final consonants, and its full system of soft, hard, and aspirated initials. The Tibetan numerals exemplify this with sufficient clearness.

5.) While the Mongol is near the Chinese in the extensive prevalence of words common to the two languages, the Tibetan is near in phonal structure, as being tonic and monosyllabic. This being so, it is less remarkable that there are many words common to Chinese and Tibetan, for it might have been expected; but that there should be perhaps as many in the Mongol with its long untoned polysyllables, is a curious circumstance."

This is no doubt the right spirit in which researches into the early history of language should be conducted, and I hope that Mr. Edkins, Mr. Chalmers, and others, will not allow themselves to be discouraged by the ordinary objections that are brought against all tentative

studies. Even if their researches should only lead to negative results, they would be of the highest importance. The criterion by which we test the relationship of inflectional languages, such as Sanskrit and Greek, Hebrew and Arabic, cannot, from the nature of the case, be applied to languages which are still in the agglutinative or isolating stratum, nor would they answer any purpose if we tried by them to determine whether certain languages, separated during their inflectional growth, had been united during their agglutinative stage, or whether languages, separated during their agglutinative progress, had started from a common centre in their monosyllabic age. Bopp's attempt to work with his Aryan tools on the Malayo-Polynesian languages, and to discover in them traces of Aryan forms ought to serve as a warning example. However, there are dangers also, and even greater dangers, on the opposite shore, and if Mr. Chalmers in his interesting work on "the Origin of Chinese," compares, for instance, the Chinese tzé, child, with the Bohemian tsi, daughter, I know that the indignation of the Aryan scholars will be roused to a very high pitch, considering how they have proved most minutely that tsi or dci in Bohemian is the regular modification of dugte, and that dugte is the Sanskrit duhitar, the Greek θυγάτηρ, daughter, originally a pet-name, meaning a milk-maid, and given by the Aryan shepherds, and by them only, to the daughters of their house. Such accidents* will happen

* If Mr. Chalmer's comparison of the Chinese and Bohemian names for daughter is so unpardonable, what shall we say of Bopp's comparison of the Bengali and Sanskrit names for sister? Sister in Bengali is bohinî, the Hindi bahin and bhân, the Prakrit bahinî, the Sanskrit bhaginî. Bopp in the most elaborate way derives bohinî from the Sanskrit svasri, sister. Bopp, Vergleichende Grammatik, Vorrede zur vierten Abtheilung, p. x.

in so comprehensive a subject as the Science of Language. They have happened to scholars like Bopp, Grimm, and Burnouf, and they will happen again. I do not defend haste or inaccuracy, I only say, we must venture on, and not imagine that all is done, and that nothing remains to conquer in our science. Our watchword, here as elsewhere, should be Festina lente! but, by all means, Festina! Festina! Festina!

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After twenty years spent in collecting and publishing the text of the Rig-veda with the voluminous Commentary of Sâyaṇa, I intend to lay before the public my translation of some of the hymns contained in that collection of primeval poetry. I cannot promise a translation of all the hymns, for the simple reason, that notwithstanding Sâyaṇa's traditional explanations of every word, and in spite of every effort to decipher the original text, either by an intercomparison of all passages in which the same word occurs, or by etymological analysis, or by consulting the vocabulary and grammar of cognate languages, there remain large portions of the Rig-veda which, as yet, yield no intelligible sense. It is very easy, no doubt, to translate these obscurer portions according to Sâyaṇa's traditional interpretation; but the impossibility of adopting this alternative may be judged by the fact, that even the late Professor Wilson, who undertook to give a literal rendering of Sâyaṇa's interpretation of the Rig-veda, found himself obliged, by the rules of common sense, and by the exigencies of the English language, to desert, not unfrequently, that venerable guide. I need hardly repeat what I have so often said,[1] that it would be reckless to translate a single line of the Rig-veda without having carefully examined Sâyaṇa's invaluable commentary, and other native authorities, such as the Brâmaṇas, the Âraṇyakas, the Prâtiśâkhyas, Yâska's Nirukta, Śaunaka's Bṛihaddevatâ, the Sûtras, the Anukramaṇîs, and many other works on grammar, metre—nay, even on law and philosophy,—from which we may gather

[1] This subject and the principles by which I shall be guided in my translation of the Rig-veda have been discussed in an article lately published in the "Journal of the Royal Asiatic Society," New Series, vol. ii, part 2, "The Hymns of the Gaupâyanas and the Legend of King Asamâti.' The same volume contains two valuable articles on the same subject by Mr. J. Muir, D.C.L.

how the most learned among the Brahmans understood their own sacred writings. But it would be equally reckless not to look beyond.

A long controversy has been carried on, during the last twenty years, whether we, the scholars of Europe, have a right to criticise the traditional interpretation of the sacred writings of the Brahmans. I think we have not only the right to do so, but that it is the duty of every scholar never to allow himself to be guided by tradition, unless that tradition has first been submitted to the same critical tests which are applied to the suggestions of his own private judgment. A translator must, before all things, be a sceptic, a man who looks about, and who chooses that for which he is able to make himself honestly responsible, whether it be suggested to him, in the first instance, by the most authoritative tradition or by the merest random guess.

I offer my translation of such hymns as I can, to a certain extent, understand and explain, as a humble contribution towards a future translation of the whole of the Rig-veda. There are many scholars in England, Germany, France, and India, who now devote their energies to the deciphering of Vedic words and Vedic thoughts; in fact, there are few Sanskrit scholars at present who have not made the Veda the principal subject of their studies. With every year, with every month, new advances are made, and words and thoughts, which but lately seemed utterly unintelligible, receive an unexpected light, from the ingenuity of European students. Fifty years hence I hope that my own translation may be antiquated and forgotten. No one can be more conscious of its shortcomings than I am. All I hope is that it may serve as a step leading upwards to a higher, clearer, truer point of view, from which those who come after us may gain a real insight into the thoughts, the fears, the hopes, the doubts, the faith of the true ancestors of our race; of those whose language still lives in our own language, and whose earliest poetical compositions have been preserved to us for more than three thousand years, in the most surprising, and, to my mind, the most significant manner.

MAX MÜLLER.

Oxford, 1867.

The present publication is intended to form eight volumes, of about twenty-five sheets each, containing an English translation, notes and explanatory essays. A transliterated text (in the original Pada form) will be added in order to obviate the necessity of quoting the whole passage again and again in the various notes on the same verse. The first volume will be published as soon as a sufficient number of subscribers has been obtained. Not more than two volumes to be published in each year.

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